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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,915	10/31/2003	Guoxiang Zhou	27371-1	2983
7590 03/13/2006			EXAMINER	
Mr. Michael Roman Suite 800 885 West Georgia Street Vancouver, BC V6C 3H1 CANADA			BONK, TERESA	
			ART UNIT	PAPER NUMBER
			3725	
DATE MAILED: 03/13/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/698,915

Applicant(s)

ZHOU, GUOXIANG

Examiner

Teresa M. Bonk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-56 is/are pending in the application.
- 4a) Of the above claim(s) 43-56 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Objections

1. Claims 23-42 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claims. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Regarding claim 1, examiner suggests an addition of the word “of” on the third line of the claim, “reinforcing a portion of the tube,” to improve ease of readability.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 22-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. An apparatus claim cannot depend from a method claim because the scope of the claim cannot be determined.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 9-12 and 22-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawamura et al. (US Patent 5,555,762). Kawamura et al. discloses a method of bending a metal tube having a desired curvature and a cross-section that is circular, polygonal, or quadrilateral (Column 1, lines 9-10). The method includes having a step that reinforces a portion of the tube with a core (filling material S) that allows the portion to bend, but resists buckling of the tube walls and bending the reinforced portion of the tube. The method also includes inserting into the tube a longitudinally bendable core (S) that resists transverse compression, whereby the core redistributes transverse forces applied to the portion. The method includes reinforcing a portion of the tube with a core includes filling the portion with granules/sand (Column 1, lines 18-25) and/or liquid (fatty acid). The method includes sealing (steel plate P3) at least one end of the portion to discourage the core from coming out of the portion (Column 4, lines 22-23). Further comprising removing the core after bending the reinforced portion of the tube. (Column 4, lines 12-13)

Kawamura et al. also discloses rolling the portion between a roller (roll mold 1) and fixed structures (clamp mold 2 and pressure mold 4) that define between them a path have a desired curvature.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. in view of Berto et al. (US Patent 3,343,250). Kawamura et al. discloses the invention substantially except for inserting a sprung mechanism/coil spring into the portion of the tube. Berto et al. discloses a tube bending method having a step for inserting a sprung mechanism/coil spring (spring support, Column 1, line 25) into the portion of the tube. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Berto et al.'s suggestion of a spring mechanism in Kawamura et al.'s invention in order "to prevent crushing or deformation of the tubular material during the bending operation," (Column 1, lines 23-28).

6. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. in view of Ooyauchi et al. (US Patent 6,883,552). Kawamura et al. discloses the invention

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substantially except a specific material and material thickness for the tube. Ooyauchi et al. discloses a stainless steel tube having a thickness of 0.1 mm (Column 8, lines 31-32). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use Ooyauchi's tube material in order to achieve a desired product (Column 1, lines 13-17).

7. Claims 17-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawamura et al. in view of Spath (US Patent 6,189,354). Kawamura et al. discloses the invention substantially except for having a plurality of rollers to assist in the bending operation. Spath discloses a method for deforming a tube having rollers (13, 27-29) that define between them a path having a desired curvature including feeding the portion through a channel that is substantially congruent with the outside perimeter of the portion (Also see the figures). Therefore it would have been obvious to have use Spath's rollers to define the path of Kawamura in order "to prevent bulges and nicks of the section to be bent (and)... to achieve a required shape" (Column 1, lines 9-22).

Regarding 19-21, the tube is located in channels between the ends of rollers (13, 27-29) and it is squared as it is bent.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and further show the state of the art.

US Patent 5,823,031; US Patent 5,226,476; US Patent 3,756,053;

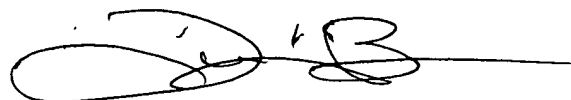
US Patent 6,810,705; US Patent 3,229,489

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa M. Bonk whose telephone number is (571) 272-1901. The examiner can normally be reached on M-F 7:30AM - 5PM with alternating Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on (571) 272-4419. The fax phone number for the organization where this application or proceeding is assigned is 571-273-9900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Teresa M. Bonk
Examiner
Art Unit 3725

A handwritten signature in black ink, appearing to read 'D. Banks', with a long horizontal line extending to the right.

**DERRIS H. BANKS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3700**